

2023 The Mathematical Society of Japan

ANNUAL MEETING

Dates: March 15th (Wed)–18th (Sat), 2023

Venue: Chuo University
 1–13–27 Kasuga, Bunkyo-ku
 Tokyo, 112-8551, Japan

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 The Mathematical Society of Japan

	I 5533	II 5333	III 5335	IV 5336	V 5233	VI 5234	VII 5235	VIII 5236	IX 5138	
15th (Wed)	Algebra 9:00–12:00 14:15–14:50	Geometry 9:30–11:40 14:15–16:00	Topology 9:30–12:00 15:40–17:30	Functional Equations 9:30–12:00 14:15–16:15	Complex Analysis 9:30–11:45	Functional Analysis 9:30–12:00 14:15–16:15	Applied Mathematics 9:50–11:50 14:15–15:25	Statistics and Probability 10:00–11:30	Found. of Math. & Hist. of Math. 9:30–10:15 14:30–16:45	
	Featured Invited Talks					13:00–14:00				
	Invited Talks 15:00–16:00 16:15–17:15	Invited Talk 16:15–17:15	Invited Talk 14:20–15:20	Invited Talk 16:30–17:30	Invited Talks 14:15–15:15 15:30–16:30	Invited Talk 16:30–17:30	Invited Talk 15:45–16:45	Invited Talks 14:15–15:15 15:30–16:30	Invited Talks 10:30–11:30 17:00–18:00	
16th (Thu)	Algebra 9:10–12:00 13:00–14:10	Geometry 9:30–12:00 Invited Talk 13:00–14:00	Topology 9:30–12:00 13:00–14:00	Functional Equations 9:15–12:00 Invited Talk 13:00–14:00	Complex Analysis 9:30–11:45 Invited Talk 13:00–14:00	Functional Analysis 9:30–12:00 Invited Talk 13:10–14:10	Applied Mathematics 10:00–11:45 13:00–14:10	Statistics and Probability 10:20–11:10	Found. of Math. & Hist. of Math. 9:15–12:15	
	MSJ Prizes Presentation (5534, 5F, Bldg. 5)						(14:30–15:05)			
	Plenary Talks (5534, 5F, Bldg. 5)						Spring Prize Winner (15:20–16:20) Takayuki Hibi (Osaka Univ.*) (16:35–17:35)			
17th (Fri)	Algebra 9:00–12:00	Geometry 9:30–11:40 14:15–14:55	Topology 9:30–12:00 15:40–17:00	Functional Equations 9:30–12:00 14:15–16:15	Real Analysis 9:00–11:45 14:15–15:25	Functional Analysis 9:30–12:00 14:15–15:30	Applied Mathematics 9:50–11:50 14:45–16:30	Statistics and Probability 9:50–11:35	Infinite Analysis 9:45–10:45	
	Featured Invited Talks					13:00–14:00				
	Invited Talks 14:40–15:40 16:00–17:00	Invited Talk 15:10–16:10	Invited Talk 14:20–15:20	Invited Talk 16:30–17:30	Invited Talks 15:40–16:40 17:00–18:00	Invited Talk 15:45–16:45	Invited Talk 16:45–17:45	Invited Talks 14:25–15:25 15:40–16:40	Invited Talk 11:00–12:00	
18th (Sat)	Algebra 9:15–12:00 14:15–16:45			Functional Equations 9:30–12:00 14:15–16:15	Real Analysis 9:00–12:00 14:15–16:30		Applied Mathematics 9:50–11:50 14:15–15:05	Statistics and Probability 10:00–11:10	Infinite Analysis 10:00–10:45	
	Featured Invited Talks					13:00–14:00				
				Invited Talk 16:30–17:30	Invited Talk 17:00–18:00		Invited Talk 15:20–16:20		Invited Talk 11:00–12:00	

Plenary Talks

March 16th (Thu) 5534, 5F, Bldg. 5

Award Lecture for the 2023 MSJ Spring Prize

Spring Prize Winner (15:20–16:20)

Takayuki Hibi (Osaka Univ.*) Polytopes and Monomials (16:35–17:35)

Featured Invited Talks

March 15th (Wed)

Conference Room I

Guest Talk from the Japan Society for Industrial and Applied Mathematics

Maki Yoshida (Nat. Inst. Information Comm. Tech.) NewSpace security —Cryptography for space development by private companies— (13:00–14:00)

Conference Room VI

Keita Yokoyama (Tohoku Univ.) Models of arithmetic and reverse mathematics (13:00–14:00)

March 17th (Fri)

Conference Room I

Yasuaki Hiraoka (Kyoto Univ.) Persistent homology: theory and application (13:00–14:00)

Conference Room III

Tsukasa Ishibashi (Tohoku Univ.) Cluster algebras and the topology of surfaces (13:00–14:00)

Conference Room V

Takayoshi Ogawa (Tohoku Univ.)^b End point maximal regularity and its application to a critical nonlinear problem (13:00–14:00)

March 18th (Sat)

Conference Room III

Masahito Yamazaki (Univ. of Tokyo) Integrability and Chern-Simons Theory (13:00–14:00)

Conference Room VI

Hideto Asashiba (Shizuoka Univ.*/Kyoto Univ./Osaka Metro. Univ.) Applications of quiver representations to persistence modules: approximations and resolutions by interval modules · (13:00–14:00)

Talks Invited by Research Sections and Special Session

March 15th (Wed)

Foundation of Mathematics and History of Mathematics (Conference Room IX)

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|---|--|---------------|
| Makoto Fujiwara (Tokyo Univ. of Sci.) | Hierarchy of semi-classical arithmetic and conservative extension theorems | (10:30–11:30) |
| Tatsuhiko Kobayashi
(Maebashi Inst. of Tech.* / Yokkaichi Univ.) | Finishing the editing of the new Seki Takakazu's Collected Works | (17:00–18:00) |

Algebra (Conference Room I)

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|--|--|---------------|
| Naoki Fujita (Kumamoto Univ.) | Schubert calculus and convex polytopes | (15:00–16:00) |
| Hiroki Matsui (Tokushima Univ.) ^b | Spectra of triangulated categories and reconstruction of schemes from their derived categories | (16:15–17:15) |

Geometry (Conference Room II)

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|------------------------------------|---|---------------|
| Daisuke Tarama (Ritsumeikan Univ.) | On integrable geodesic flows over a semi-simple Lie group | (16:15–17:15) |
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Complex Analysis (Conference Room V)

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|---|--|---------------|
| Toshihiro Nakanishi (Shimane Univ.) | Teichmüller space of the genus two surface and Kleinian groups | (14:15–15:15) |
| Award Lecture for the 2022 MSJ Analysis Prize | | |
| Katsuhiko Matsuzaki (Waseda Univ.) | Curves and function spaces of absolutely continuous Teichmüller spaces | (15:30–16:30) |

Functional Equations (Conference Room IV)

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|---|---|---------------|
| Award Lecture for the 2022 MSJ Analysis Prize | | |
| Masaru Ikehata (Hiroshima Univ.) | Development of the time domain enclosure method | (16:30–17:30) |

Functional Analysis (Conference Room VI)

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|----------------------------------|---|---------------|
| Toshimitsu Takaesu (Gunma Univ.) | On the spectral analysis of interacting quantum field systems | (16:30–17:30) |
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Statistics and Probability (Conference Room VIII)

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|------------------------------|--|---------------|
| Shuta Nakajima (Meiji Univ.) | First-passage percolation and its related topics | (14:15–15:15) |
| Song Liang (Waseda Univ.) | A mechanical model of Brownian motion | (15:30–16:30) |

Applied Mathematics (Conference Room VII)

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|-------------------------------------|--|---------------|
| Kenta Noguchi (Tokyo Univ. of Sci.) | Graphs on closed surfaces, expressly triangulations and quadrangulations | (15:45–16:45) |
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Topology (Conference Room III)

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|----------------------------|---|---------------|
| Noboru Ogawa (Tokai Univ.) | Liouville and Weinstein structures on convex symplectic manifolds | (14:20–15:20) |
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March 16th (Thu)

Geometry (Conference Room II)

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|---|--|---------------|
| Yoshinori Hashimoto
(Osaka Metro. Univ.) | ^b Recent developments on constant scalar curvature Kähler metrics with cone singularities along a divisor | (13:00–14:00) |
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Complex Analysis (Conference Room V)

- Makoto Abe (Hiroshima Univ.) Domains over a Stein manifold satisfying the Oka–Grauert principle (13:00–14:00)

Functional Equations (Conference Room IV)

- Takeyuki Nagasawa (Saitama Univ.) The decomposition of the Möbius energies and wave maps (13:00–14:00)

Functional Analysis (Conference Room VI)

- Takashi Hashimoto (Tottori Univ.) Quantization of the moment map on symplectic vector spaces and minimal representation (13:10–14:10)

March 17th (Fri)

Algebra (Conference Room I)

Award Lecture for the 2023 MSJ Algebra Prize

- Yoshinori Gongyo (Univ. of Tokyo) On higher dimensional minimal model theory and its applications (14:40–15:40)

Award Lecture for the 2023 MSJ Algebra Prize

- Satoshi Wakatsuki (Kanazawa Univ.) Trace formulas and their applications (16:00–17:00)

Geometry (Conference Room II)

- Harish Seshadri
(Indian Inst. of Sci., Bangalore) On the diameter of Kähler manifolds with positive bisectional curvature (15:10–16:10)

Functional Equations (Conference Room IV)

- Naoyasu Kita (Kumamoto Univ.)^b On behaviors of solutions to nonlinear Schrödinger equations with complex coefficient in its nonlinearity (16:30–17:30)

Real Analysis (Conference Room V)

Award Lecture for the 2022 MSJ Analysis Prize

- Eiichi Nakai (Ibaraki Univ.) Generalized Campanato spaces with variable growth condition and related topics (15:40–16:40)

- Hitoshi Tanaka
(Tsukuba Univ. of Tech.) Dyadic cubes analysis, dyadic rectangles analysis (17:00–18:00)

Functional Analysis (Conference Room VI)

- Masaru Nagisa
(Ritsumeikan Univ./Chiba Univ.) Non-linear traces on the algebra of compact operators and majorization (15:45–16:45)

Statistics and Probability (Conference Room VIII)

- Takeru Matsuda
(Univ. of Tokyo/RIKEN) Shrinkage estimation: from vector to matrix (14:25–15:25)

- Yuma Uehara (Kansai Univ.) Information criteria for jump diffusion models (15:40–16:40)

Applied Mathematics (Conference Room VII)

- Koya Sakakibara
(Okayama Univ. of Sci./RIKEN) Structure-preserving numerical analysis of interfacial phenomena (16:45–17:45)

Topology (Conference Room III)

- Atsushi Ishii (Univ. of Tsukuba) Alexander type invariants of groups, quandles and MCQs · (14:20–15:20)

Infinite Analysis (Conference Room IX)

Rei Inoue (Chiba Univ.) Cluster realization of Weyl groups and its applications to representation theory (11:00–12:00)

March 18th (Sat)

Functional Equations (Conference Room IV)

Youhei Tsutsui (Kyoto Univ.)^b Convergence to the initial data and weighted estimates for the incompressible Navier–Stokes equations (16:30–17:30)

Real Analysis (Conference Room V)

Shunsuke Kurima (Tokyo Univ. of Sci.) Time discretization methods for phase field systems (17:00–18:00)

Applied Mathematics (Conference Room VII)

Kei Nishi (Kyoto Sangyo Univ.) Pulse dynamics in a three-component reaction-diffusion system (15:20–16:20)

Infinite Analysis (Conference Room IX)

Travis Scrimshaw (Hokkaido Univ.)^b Krystal theory (11:00–12:00)

Open Lectures for Citizens

Date: March 18th (Sat) 14:15–16:45

Venue: 5534, 5F, Bldg. 5

Sponsored by: The Mathematical Society of Japan

Co-sponsored by: Chuo University

Program: Opening Speech (14:15–14:20)
Senjou Shimizu (President of MSJ/Kyoto Univ.)

Lecture 1: “Japanese Theorem and Catalan Number” (14:25–15:25)
Toshio Oshima (Josai Univ.)

Lecture 2: “Fractals and Stability of Dynamical Systems” (15:45–16:45)
Tomoki Kawahira (Hitotsubashi Univ.)

Web Page: <https://www.mathsoc.jp/en/meeting/chuo23mar/>

Foundation of Mathematics and History of Mathematics

March 15th (Wed) Conference Room IX

9:30–10:15

- 1 Kohtaro Tadaki (Chubu Univ.) An effectivization of the law of large numbers for algorithmically random sequences and its absolute speed limit of convergence 15
- 2 Yudai Suzuki (Tohoku Univ.) On the Weihrauch degrees between C_{ω^ω} and ATR 15
Keita Yokoyama (Tohoku Univ.)

10:30–11:30 Talk Invited by Section on Foundation and History of Mathematics

- Makoto Fujiwara (Tokyo Univ. of Sci.) Hierarchy of semi-classical arithmetic and conservative extension theorems

14:15–14:30 Mathematics History Team Meeting

14:30–16:45

- 3 Makoto Tamura (Osaka Sangyo Univ.) On the equations of “Continuation of Ancient Mathematics” 15
Toshio Harikae (Osaka Sangyo Univ.)
- 4 Toshio Harikae (Osaka Sangyo Univ.) On restriction of lost chinese text in Continuation of Ancient Mathematics 15
Makoto Tamura (Osaka Sangyo Univ.)
- 5 Katsushi Waki (Yamagata Univ.) Evaluation of the accuracy of extracting graphic regions in a WASAN book 15
- 6 Tsukane Ogawa (Yokkaichi Univ.) Problems related to the uniqueness of mathematical thought in Oka Yuki-tada’s *Collection of Exquisite Formulae* 15
- 7 Hideyuki Majima (Ochanomizu Univ.*) Supplement to the paper “Seki Takakazu, his life and bibliography” 15
- 8 Hideyuki Majima (Ochanomizu Univ.*) Theoretical meaning of the calculation of Pi by Seki Takakazu and Takebe Katahiro 15
- 9 Hideyuki Majima (Ochanomizu Univ.*) The year 2022, the memorial 314th year of Seki Takakazu and the 300th anniversary of “Takebe Katahiro’s Tetsujjutsu-Sankei” 15
- 10 Noriko Tanaka A study on stochastic representations for random motion 15
(Aichi Prefectural Asahigaoka High School)
Nozomu Matsubara (Univ. of Tokyo*)

17:00–18:00 Talk Invited by Section on Foundation and History of Mathematics

- Tatsuhiko Kobayashi Finishing the editing of the new Seki Takakazu’s Collected Works
(Maebashi Inst. of Tech.*/Yokkaichi Univ.)

March 16th (Thu) Conference Room IX

9:15–12:15

- 11 Toshimichi Usuba (Waseda Univ.) Monotonicity of ultrafilter numbers 15
- 12 Kota Takeuchi (Univ. of Tsukuba) On the indivisibility of metric structures 15
- 13 Hirotaka Kikyo (Kobe Univ.) On the structure of Hrushovski’s pseudoplanes 15

14	Akito Tsuboi (Univ. of Tsukuba*)	Ramsey's theorem and coher sequences	10
15	<u>Leonardo Pacheco</u> (Tohoku Univ.) Kazuyuki Tanaka (Tohoku Univ.)	Fixed-points in epistemic logic	15
16	Taishi Kurahashi (Kobe Univ.)	Extensions of the Friedman–Goldfarb–Harrington theorem	15
17	<u>Taishi Kurahashi</u> (Kobe Univ.) Haruka Kogure (Kanazawa Univ.)	Monotonic modal logics of provability predicates	15
18	Sohei Iwata (Kobe Univ.)	The cut-elimination theorem for Sacchetti's logics	15
19	<u>Yuya Okawa</u> (Chiba Univ.) Sohei Iwata (Kobe Univ.) Taishi Kurahashi (Kobe Univ.)	The logic $\mathbf{IL}^-(\mathbf{P})$	15

12:15–12:30 Research Section Assembly**Algebra**

March 15th (Wed) Conference Room I

9:00–12:00

1	Daisuke Tambara	b A linear figure in the Cartesian plane satisfying a condition of rectangle	10
2	Toshiyuki Abe (Ehime Univ.)	Harada's conjecture II and Gramian determinants	10
3	Kenichiro Tanabe (Tokyo City Univ.)	Fusion rules for the fixed point subalgebra of the vertex algebra associated with a non-degenerate and non-positive definite even lattice by an automorphism of order 2	15
4	<u>Takeshi Suzuki</u> (Okayama Univ.) Yoshitaka Toyosawa	On hook formulas for cylindric skew diagrams	15
5	Yutaka Yoshii (Ibaraki Univ.)	Some results on certain subalgebras of the hyperalgebra of a simple algebraic group	10
6	Yuichiro Goto (Osaka Univ.)	A remark on the number of quasi-hereditary structures	15
7	<u>Kengo Miyamoto</u> (Ibaraki Univ.) Qi Wang (Tsinghua Univ.)	On τ -tilting finiteness of symmetric algebras of polynomial growth . . .	15
8	<u>Sota Asai</u> (Osaka Univ.) Osamu Iyama (Univ. of Tokyo)	The rigid parts of the elements of the real Grothendieck groups	15
9	Masahisa Sato (Aichi Univ./Univ. of Yamanashi*)	On generalized Nakayama–Azumaya's Lemma	10
10	<u>Tsutomu Nakamura</u> (Mie Univ.) Michal Hrbek (Czech Acad. of Sci.) Jan Šťovíček (Charles Univ. in Prague)	Large tilting complexes and homomorphic images of Cohen–Macaulay rings	15
11	Akihiro Higashitani (Osaka Univ.)	Effectiveness conjecture on equivariant Ehrhart theory and a kind of its counterexample	15

14:15–14:50

- 12 Masamichi Kuroda (Nippon Bunri Univ.) On the classification of monomial GAPN functions 15
 Kentaro Mitsui (Kobe Univ.)
- 13 So Yamagata (Fukuoka Univ.) On classification of r -sets and a sufficient condition for non-very genericity of arrangements 15

15:00–16:00 Talk Invited by Algebra Section

Naoki Fujita (Kumamoto Univ.) Schubert calculus and convex polytopes

16:15–17:15 Talk Invited by Algebra Section

Hiroki Matsui (Tokushima Univ.)^b Spectra of triangulated categories and reconstruction of schemes from their derived categories

March 16th (Thu) Conference Room I

9:10–12:00

- 14 Yuya Otake (Nagoya Univ.) Stable categories of n -spherical modules and n -torisonfree modules ... 10
- 15 Ryo Ishizuka (Tokyo Tech) An explicit construction of perfectoid almost Cohen–Macaulay algebra
 Kazuma Shimomoto (Nihon Univ.) in mixed characteristic 15
- 16 Shinnosuke Ishiro (Nihon Univ.) The canonical module of a local log-regular ring 15
- 17 Koji Matsushita (Osaka Univ.) Conic divisorial ideals of toric rings and applications to stable set rings 15
- 18 Yuki Ishihara (Tokyo Univ. of Sci.) Computation of ideal operations with parameters 15
- 19 Kyohei Hattori (Niigata Univ.) Rings of nilpotent elements of monomial derivations on polynomial rings
 Hideo Kojima (Niigata Univ.) 15
- 20 Kaito Kimura (Nagoya Univ.) Asymptotic depths of localizations of modules 10
- 21 Naoki Endo (Meiji Univ.) On the stratification of one-dimensional Cohen–Macaulay rings 15
- 22 Tomohiro Okuma (Yamagata Univ.) The core of ideals in minimally elliptic singularities 15
 Ken-ichi Yoshida (Nihon Univ.)
 Kei-ichi Watanabe (Nihon Univ./Meiji Univ.)
- 23 Ken-ichi Yoshida (Nihon Univ.) Gorensteinness for normal tangent cones of the maximal ideals in
 Tomohiro Okuma (Yamagata Univ.) Brieskorn hypersurfaces 15
 Kei-ichi Watanabe (Nihon Univ./Meiji Univ.)

13:00–14:10

- 24 Yoshimune Koreeda (Hiroshima Univ.) Jet scheme of a singular surface of type D_4^1 in characteristic 2 13
- 25 Hiroto Akaike (Osaka Univ.)^b Bounds for the order of automorphism groups of cyclic covering fibrations of an elliptic surface 13
- 26 Ryosuke Masuya (Tokyo Metro. Univ.) On weak-bitangents for plane quartics and rational elliptic surfaces ... 13
- 27 Tatsuki Yamaguchi (Univ. of Tokyo)^b Big Cohen–Macaulay test ideals in equal characteristic zero via ultra-products 13

March 17th (Fri) Conference Room I

9:00–12:00

- 28 Makoto Sakurai (Kaichi Gakuen) Dimensions of chiral conformal fields and quasi-coherent sheaves 13
- 29 Tomohiro Iwami (Kyushu Inst. of Tech.) Majorana double solids for three-dimensional Miyaoka–Yau type inequality with the associated third Chern classes 13
- 30 Yuta Takahashi (Chuo Univ.) Fano 4-folds with nef tangent bundle in positive characteristic 13
Kiwamu Watanabe (Chuo Univ.)
- 31 Taro Yoshino (Univ. of Tokyo) On the degree of irrationality of complete intersections 13
- 32 Yuki Mizuno (Waseda Univ.) Some examples of noncommutative projective Calabi–Yau schemes . . . 13
- 33 Akinari Hoshi (Niigata Univ.) Birational classification for algebraic tori (I) 13
Aiichi Yamasaki (Kyoto Univ.)
- 34 Akinari Hoshi (Niigata Univ.) Birational classification for algebraic tori (II) 13
Aiichi Yamasaki (Kyoto Univ.)
- 35 Masayuki Sukenaga (Hiroshima Univ.) Tropical lifting problem for the intersection of plane curves 13
- 36 Michio Amano (Meisei Univ.) On kernels of certain homomorphisms of Witt vectors, II 10
- 37 Daiki Kawabe (Tohoku Univ.) Chow motives of genus one fibrations 13
- 38 Tetsuya Ando (Chiba Univ.) Symmetric quartic extremal inequalities of four variables and K3 surfaces 13
- 39 Emiko Yorisaki (Tokyo Metro. Univ.) Ramified and Split models of rational elliptic surfaces and bitangent
Shinzo Bannai (Okayama Univ. of Sci.) lines for a quartic curve 10
Hiro-o Tokunaga (Tokyo Metro. Univ.)

14:15–14:30 Presentation Ceremony for the 2023 MSJ Algebra Prize**14:40–15:40 Award Lecture for the 2023 MSJ Algebra Prize**

Yoshinori Gongyo (Univ. of Tokyo) On higher dimensional minimal model theory and its applications

16:00–17:00 Award Lecture for the 2023 MSJ Algebra Prize

Satoshi Wakatsuki (Kanazawa Univ.) Trace formulas and their applications

March 18th (Sat) Conference Room I

9:15–12:00

- 40 Shigeru Iitaka (Gakushuin Univ.*) Super perfect numbers of the second kind 13
- 41 Masato Kobayashi (Kanagawa Univ.) Balance for the divisor sum function 13
- 42 Yuya Kanado (Nagoya Univ.) The relation between a generalized Fibonacci sequence and the length of Cunningham chains 13
- 43 Shun-ichi Kurino (Nihon Univ.) The error term in the prime number theorem under the RH 10
Masatoshi Nakano
(Kesennuma Coll. of Tech.)
- 44 Shingo Sugiyama (Nihon Univ.) On a weighted density of zeros of Dirichlet L -functions in a family
Ade Irma Suriajaya (Kyushu Univ.) 10

45	Yasufumi Hashimoto (Univ. of Ryukyus)	Universality theorem for the Selberg zeta function	13
46	Takeshi Shinohara (Nagoya Univ.)	On shuffle product of desingularized multiple zeta functions	13
47	Masaki Kato (Toyama Nat. Coll. of Tech.)	On q -analogues of zeta functions of root systems	13
48	Masahiro Mine (Sophia Univ.)	Weak denseness theorem for the Hurwitz zeta-function with quadratic irrational parameter	13
49	Keita Nakai (Nagoya Univ.)	Universality for the iterated integrals for the logarithm of L-functions in the Selberg class	10
50	Kazunari Sugiyama (Chiba Inst. of Tech.)	The modularity of Siegel's zeta functions	13
14:15–16:45			
51	Wataru Takeda (Tokyo Univ. of Sci.) Maki Nakasuji (Sophia Univ./Tohoku Univ.) Yoshinori Yamasaki (Ehime Univ.)	Quadratic relations for 9th variation Schur functions involving Plücker relations	13
52	Genki Shibukawa (Kobe Univ.) Yoshiaki Goto (Otaru Univ. of Commerce)	Some monotonic properties of special values of the bivariate complete homogeneous symmetric polynomials	10
53	Akinari Hoshi (Niigata Univ.) Kazuki Kanai (Niigata Univ.) Aiichi Yamasaki (Kyoto Univ.)	Hasse norm principle for M_{11} extensions	13
54	Tomoyoshi Ibukiyama (Osaka Univ.*)	Dimensions of paramodular forms with involutions	10
55	Tomoyoshi Ibukiyama (Osaka Univ.*)	Differential operators on Siegel modular forms and Laplace transforms	13
56	Yuichi Sakai (Kurume Inst. of Tech.)	On modular-form solutions of a certain modular linear differential equations for cocompact groups	13
57	Shingo Sugiyama (Nihon Univ.) Kenji Sakugawa (Shinshu Univ.)	Integrality of Hecke eigenvalues of Hilbert and Siegel modular forms	10
58	Yuki Kato (Ube Nat. Coll. of Tech.)	Almost mathematics and its algebraic K -theory from non-unital algebras viewpoint	13
59	Norihiko Minami (Nagoya Inst. of Tech.)	SBNR (stably birationalized unramified sheaf) and Gersten type resolution for any motivic generalized cohomology theory	13
60	Norihiko Minami (Nagoya Inst. of Tech.)	b Higher codimensional irrationality of counter examples of the integral Hodge conjecture	13

Geometry

March 15th (Wed) Conference Room II

9:30–11:40

- | | | | |
|---|--|---|----|
| 1 | Antoni Kijowski
(Okinawa Inst. of Sci. and Tech. Grad. Univ.) | Asymptotically mean value harmonic functions | 15 |
| 2 | Shigeaki Yokota (Tohoku Univ.) | Geometry of geometric data set | 15 |
| 3 | Daisuke Kazukawa (Kyushu Univ.)
Hiroki Nakajima (Tohoku Univ.)
Takashi Shioya (Tohoku Univ.) | Topological aspects of the space of metric measure spaces | 15 |
| 4 | Daisuke Kazukawa (Kyushu Univ.)
Hiroki Nakajima (Tohoku Univ.)
Takashi Shioya (Tohoku Univ.) | Principal bundle structure of the space of metric measure spaces | 10 |
| 5 | Takumi Matsuka (Tokyo Metro. Univ.) | Free products of metric spaces and the coarse Baum–Connes conjecture
. | 15 |
| 6 | Yoshito Ishiki (RIKEN) | Continua in the Gromov–Hausdorff space | 15 |
| 7 | Yoshito Ishiki (RIKEN) | Metric trees in the Gromov–Hausdorff space | 15 |

14:15–16:00

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| 8 | Kentarō Yonemura (Kyushu Univ.) | Embedding smooth quandles in Lie groups | 10 |
| 9 | Yuuki Sasaki (Tokyo Nat. Coll. of Tech.) | Some submanifolds of the associative Grassmann manifold | 15 |
| 10 | Taro Kimura
(Nat. Inst. of Tech., Tsuruoka Coll.)
Katsuya Mashimo (Hosei Univ.) | Biharmonic Cartan embeddings | 10 |
| 11 | Osamu Ikawa (Kyoto Inst. Tech.)
Katsuya Mashimo (Hosei Univ.) | The geometry of orbits of σ -action induced by triality automorphism of
$Spin(8)$ | 15 |
| 12 | Kazumi Tsukada (Ochanomizu Univ.*) | The complexification of Lie sphere geometry and totally complex sub-
manifolds of the real Grassmann manifold | 15 |
| 13 | Yusuke Sakane (Osaka Univ.*) | Existence and non-existence of Einstein metrics on compact homoge-
neous manifolds | 15 |

16:15–17:15 Talk Invited by Geometry Section

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|------------------------------------|---|
| Daisuke Tarama (Ritsumeikan Univ.) | On integrable geodesic flows over a semi-simple Lie group |
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March 16th (Thu) Conference Room II

9:30–12:00

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| 14 | Masaya Kawamura
(Kagawa Nat. Coll. of Tech.) | On a k -th Gauduchon metric on compact almost Hermitian manifolds
. | 15 |
| 15 | Natsuo Miyatake (Kyushu Univ.)
Hisashi Kasuya (Osaka Univ.) | Uniformization of compact Sasakian manifolds using basic Higgs bun-
dles | 15 |

12 Geometry

- 16 Natsuo Miyatake (Kyushu Univ.) Restriction of Donaldson’s functional to diagonal metrics on Higgs bundles with not-holomorphic Higgs fields 15
- 17 Natsuo Miyatake (Kyushu Univ.) Some generalizations of the Hermitian–Einstein equation of cyclic Higgs bundles and their parabolic equations and the Dirichlet problem 15
- 18 Koki Matsuzaka (Hokkaido Univ.)
Masao Jinzenji (Okayama Univ.) Recursion relation on moduli space of quasimaps in the case of Calabi–Yau hypersurface in CP^{N-1} 15
- 19 Kazushi Kobayashi (Osaka Univ.) A gerby deformation of complex tori and the homological mirror symmetry 15
- 20 Hayato Nakanishi (Chiba Univ.) Homological mirror symmetry of toric Fano surfaces via Morse homotopy 15
- 21 Yuto Yamamoto (IBS-CGP) Period integrals of hypersurfaces via tropical geometry 15

13:00–14:00 Talk Invited by Geometry Section

- Yoshinori Hashimoto (Osaka Metro. Univ.) b Recent developments on constant scalar curvature Kähler metrics with cone singularities along a divisor

March 17th (Fri) Conference Room II

9:30–11:40

- 22 Hiroaki Izumi (Hiroshima Univ.) Significance of game theory and formulization of in-phase and anti-phase circadian rhythms 15
- 23 Yoshiki Jikumaru (Kyushu Univ.)
Kentarō Hayakawa (Kyoto Univ.)
Kazuki Hayashi (Kyoto Univ.)
Kenji Kajiwara (Kyushu Univ.)
Yohei Yokosuka (Kagoshima Univ.) On the Michell truss-like structure and discrete log-aesthetic curves based on integrable geometry 15
- 24 Yoshihiko Suyama (Fukuoka Univ.)
Nozomu Matsuura (Kurume Inst. of Tech.) Extension and approximation of curvature surfaces in generic conformally flat hypersurfaces 15
- 25 Satoshi Ishiwata (Yamagata Univ.)
Hiroshi Kawabi (Keio Univ.) A discretization of a non-symmetric diffusion on a Riemannian manifold 10
- 26 Ye Zhang (Okinawa Inst. of Sci. and Tech. Grad. Univ.) Gradient estimates for the heat semigroup on step-two Carnot groups 15
- 27 Yuichiro Taketomi (Osaka Metro. Univ.) A maximal element of a moduli space of Riemannian metrics 15
- 28 Yoshihiko Matsumoto (Osaka Univ.) Renormalized energy of maps and conformal geodesics 15

14:15–14:55

- 29 Tomoshige Yukita (Waseda Univ.) On nerves and growth rates of 2-dimensional Coxeter systems 15
- 30 Akira Ushijima (Univ. of Hyogo) Ceva’s and Menelaus’ theorems in the hyperbolic plane as Cayley–Klein geometry 10

- 12 Hidetaka Hamada (Kyushu Sangyo Univ.) Fekete–Szegő problem for univalent mappings in one and higher dimensions 15
 Gabriela Kohr (Babeş-Bolyai Univ.)
 Mirela Kohr (Babeş-Bolyai Univ.)
- 13 Hidetaka Hamada (Kyushu Sangyo Univ.) Loewner PDE in infinite dimensions 15
 Gabriela Kohr (Babeş-Bolyai Univ.)
- 14 Shaolin Chen (Hengyang Normal Univ.) Some sharp Schwarz–Pick type estimates and their applications of
Hidetaka Hamada (Kyushu Sangyo Univ.) harmonic and pluriharmonic functions 15
- 15 Shaolin Chen (Hengyang Normal Univ.) Schwarz type lemmas and their applications in Banach spaces 15
Hidetaka Hamada (Kyushu Sangyo Univ.)
 Saminathan Ponnusamy (Indian Inst. of Tech. Madras)
 Ramakrishnan Vijayakumar (Indian Inst. of Tech. Madras)
- 16 Yuta Watanabe (Univ. of Tokyo) L^2 -type Dolbeault isomorphisms and vanishing theorems for logarithmic sheaves twisted by multiplier ideal sheaves 15
- 17 Takeo Ohsawa (Nagoya Univ.)^b On the Levi problem on Kähler manifolds under the negativity of canonical bundles on the boundary 15
- 13:00–14:00 Talk Invited by Complex Analysis Section**
 Makoto Abe (Hiroshima Univ.) Domains over a Stein manifold satisfying the Oka–Grauert principle

Functional Equations

March 15th (Wed) Conference Room IV

9:30–12:00

- 1 Yumiko Takei (Ibaraki Nat. Coll. of Tech.) On the expression of Voros coefficients for the hypergeometric differential equation of type (1,1,1,2) in terms of the topological recursion, and its applications 12
- 2 Saiei-Jaeyeong Matsubara-Heo (Kumamoto Univ.) The signature of the invariant hermitian form for a regular holonomic GKZ system 12
 Yoshiaki Goto (Otaru Univ. of Commerce)
- 3 Hidekazu Ito (Kanagawa Univ.) Birkhoff normalization of a family of symplectic maps and superintegrability of Hamiltonian systems 12
- 4 Yutaka Kamimura (Tokyo Univ. of Marine Sci. and Tech.)^{*} ^b Two-component solitons via an energy dependent inverse scattering .. 12

15 Functional Equations

- 5 Yuki Hata (Osaka Pref. Univ.) Asymptotic stability in a linear differential equation with two delays
Hideaki Matsunaga (Osaka Metro. Univ.) 12
- 6 Masakazu Onitsuka On Ulam stability of two-dimensional linear differential systems 10
 (Okayama Univ. of Sci.)
- 7 Hiroyuki Usami (Gifu Univ.) Study on nonexistence results of positive solutions of ODEs without
 assuming monotonicities on nonlinear terms 10
- 8 Tetsutaro Shibata (Hiroshima Univ.) Global and asymptotic behaviors of bifurcation curves of one-dimensional
 nonlocal elliptic equations 12
- 9 Naoki Hamamoto (Osaka Metro. Univ.) The Poincaré constant for curl-free vector fields on a ball 12
- 10 Saburo Saitoh Functional equations and theory of reproducing kernels 10
 (Gunma Univ.*/Inst. of Reproducing Kernels)
- 11 Saburo Saitoh Representations of quotients $g/f = h$ in terms of $g=fh$ 12
 (Gunma Univ.*/Inst. of Reproducing Kernels)
- 14:15–16:15**
- 12 Toshio Horiuchi (Ibaraki Univ.) On general Caffarelli–Kohn–Nirenberg type inequalities involving non-
 doubling weights 12
- 13 Ryuji Kajikiya Boundedness of critical points in the symmetric mountain pass lemma
 (Osaka Electro-Comm. Univ.) 12
- 14 Goro Akagi (Tohoku Univ.) Maximal regularity of distributional solutions to degenerate elliptic
Hiroki Miyakawa (Tohoku Univ.) systems for locally integrable data 12
- 15 Goro Akagi (Tohoku Univ.) On some quasistatic evolution equation arising from fracture mechanics
Kotaro Sato (Tohoku Univ.) 12
- 16 Tomoyuki Oka (Univ. of Tokyo) Corrector results for space-time homogenization of fast diffusion equa-
 tions without assumptions for smoothness of coefficients 12
- 17 Takashi Suzuki (Osaka Univ.) Mathematical analysis for Brownian particle gas 5
- 18 Koichi Taniguchi (Tohoku Univ.) Unconditional uniqueness and non-uniqueness of solutions for Hardy–
 Noboru Chikami (Nagoya Inst. of Tech.) Hénon parabolic equations 10
 Masahiro Ikeda (RIKEN/Keio Univ.)
 Slim Tayachi (Univ. de Tunis El Manar)
- 19 Masahiko Shimojo Spreading behavior of an SIR model with non-local dispersal 10
 (Tokyo Metro. Univ.)
 Jong Shenq Guo (Tamkang Univ.)
 Amy Ai-Ling Poh (Univ. of Tokyo)
- 20 Masahiko Shimojo Spreading behavior of a predator-prey system with fractional Laplacian
 (Tokyo Metro. Univ.) 12
 Jong Shenq Guo (Tamkang Univ.)

16:30–17:30 Award Lecture for the 2022 MSJ Analysis Prize

- Masaru Ikehata (Hiroshima Univ.) Development of the time domain enclosure method

March 16th (Thu) Conference Room IV

9:15–12:00

- 21 Masaaki Mizukami (Kyoto Univ. of Edu.) Non-simultaneous blow-up in a two-species chemotaxis-competition model with single production 12
Yuya Tanaka (Tokyo Univ. of Sci.)
- 22 Yuya Tanaka (Tokyo Univ. of Sci.) Finite-time blow-up in a degenerate parabolic–elliptic Keller–Segel system with logistic source 12
- 23 Yutaro Chiyo (Tokyo Univ. of Sci.) Boundedness of solutions to a chemotaxis system for tumor angiogenesis 12
Masaaki Mizukami (Kyoto Univ. of Edu.)
- 24 Takeshi Suguro (Kyoto Univ.)^b Well-posedness of the Cauchy problem of a parabolic-elliptic Keller–Segel system in uniformly local spaces 12
- 25 Tatsuya Hosono (Tohoku Univ.)^b Global existence of solutions to the 4D attraction-repulsion chemotaxis system and applications of Brezis–Merle inequality 12
Takayoshi Ogawa (Tohoku Univ.)
- 26 Kiichi Tashiro (Tokyo Tech) On the construction of canonical generalized mean curvature flow by elliptic regularization 10
- 27 Tatsuya Miura (Tokyo Tech) Complete classification of planar p -elasticae 12
Kensuke Yoshizawa (Kyushu Univ.)
- 28 Takeyuki Nagasawa (Saitama Univ.) A lower estimate of the life-span and a blow-up rate for non-local curvature flows for plane curves 10
- 29 Tatsu-Hiko Miura (Hirosaki Univ.) Error estimate for classical solutions to the heat equation in a moving thin domain and its limit equation 12
- 30 Hirokazu Ninomiya (Meiji Univ.) Example of pattern formation by equal diffusion 12
- 31 Hirokazu Ninomiya (Meiji Univ.) Dynamics of area-preserving curvature flow of a convex plane curve in an inhomogeneous medium 12

13:00–14:00 Talk Invited by Functional Equations Section

- Takeyuki Nagasawa (Saitama Univ.) The decomposition of the Möbius energies and wave maps

March 17th (Fri) Conference Room IV

9:30–12:00

- 32 Yohei Sato (Saitama Univ.) Even ground state for nonlinear Schrödinger systems with repulsive interaction 12
- 33 Hiroyuki Hirayama (Univ. of Miyazaki) Existence and stability of ground states for the system of nonlinear Schrödinger equations with derivative nonlinearity 12
Masahiro Ikeda (RIKEN/Keio Univ.)
- 34 Noriyoshi Fukaya (Tokyo Univ. of Sci.) Instability of stationary solutions for double power nonlinear Schrödinger equations in one dimension 12
Masayuki Hayashi (Univ. di Pisa/Waseda Univ.)
- 35 Yuji Sagawa (Chiba Inst. of Tech.) Finite time blow up solutions to the nonlinear Schrödinger equation with harmonic potential for arbitrary small initial data 12
Takuya Sato (Tohoku Univ.)
Shota Kawakami (Saitama Univ.)

- 36 Hiroyuki Hirayama (Univ. of Miyazaki) Well-posedness of the Cauchy problem for the two dimensional quadratic
Shinya Kinoshita (Saitama Univ.) nonlinear Schrödinger equation with angular regularity 12
Mamoru Okamoto (Osaka Univ.)
- 37 Shun Tsuhara (Tohoku Univ.)^b Global well-posedness for the Sobolev critical nonlinear Schrödinger
Takayoshi Ogawa (Tohoku Univ.) system in four space dimensions 12
- 38 Takuya Sato (Tohoku Univ.)^b The initial boundary value problem of nonlinear Schrödinger equations
Nakao Hayashi (Tohoku Univ.) with a nonlinear Neumann boundary condition 12
Takayoshi Ogawa (Tohoku Univ.)
- 39 Yuki Osada (Tokyo Metro. Univ.) Existence of a minimizer for a nonlinear Schrödinger system with three
wave interaction under non-symmetric potentials 12
- 40 Masahiro Ikeda (RIKEN/Keio Univ.) Global dynamics below a threshold for the nonlinear Schrödinger equa-
Takahisa Inui tions with the Kirchhoff boundary and the repulsive Dirac delta bound-
(Osaka Univ./Univ. of British Columbia) ary on a star graph 12
Masaru Hamano (Waseda Univ.)
Ikkei Shimizu (Osaka Univ.)
- 41 Jumpei Kawakami (Kyoto Univ.) Averaging of strong magnetic nonlinear Schrödinger equations in energy
space 12
- 14:15–16:15**
- 42 Kenjiro Ishizuka (Kyoto Univ.) Long-time asymptotics of the one-dimensional damped nonlinear Klein–
Gordon equation with a potential 12
- 43 Satoshi Masaki (Osaka Univ.) On classification of cubic nonlinear systems 12
Jun-ichi Segata (Kyushu Univ.)
Kota Uriya (Okayama Univ. of Sci.)
- 44 Satoshi Masaki (Osaka Univ.)^b On classification of complex-valued cubic nonlinear systems 12
- 45 Kimitoshi Tsutaya (Hirosaki Univ.)^b Blow up of solutions of semilinear wave equations with time-dependent
Yuta Wakasugi (Hiroshima Univ.) damping 12
- 46 Ikki Fukuda (Shinshu Univ.) Large time behavior and optimal decay estimate for solutions to the
Hiroyuki Hirayama (Univ. of Miyazaki) Cauchy problem for the generalized KP–Burgers equation in 2D 10
- 47 Slim Ibrahim (Univ. of Victoria) Phase transition threshold and stability of magnetic skyrmions 12
Ikkei Shimizu (Osaka Univ.)
- 48 Masashi Ohnawa On the shallow water systems under periodic boundary conditions ... 12
(Tokyo Univ. of Marine Sci. and Tech.)
Masahiro Suzuki (Nagoya Inst. of Tech.)
- 49 Takashi Furuya (Shimane Univ.) Inverse medium scattering problems with Kalman filter techniques ... 10
- 16:30–17:30 Talk Invited by Functional Equations Section**
- Naoyasu Kita (Kumamoto Univ.)^b On behaviors of solutions to nonlinear Schrödinger equations with com-
plex coefficient in its nonlinearity

March 18th (Sat) Conference Room IV

9:30–12:00

- 50 Naoyuki Iwata (Nagoya Inst. of Tech.) Stationary solutions of the Vlasov–Poisson system for a multicomponent
Masahiro Suzuki (Nagoya Inst. of Tech.) plasma 12

- 51 Masahiro Suzuki (Nagoya Inst. of Tech.) Stability and instability of stationary solutions of the Vlasov–Poisson system 12
 Masahiro Takayama (Keio Univ.)
 Katherine Zhiyuan Zhang
 (New York Univ.)
- 52 Taichi Eguchi (Waseda Univ.) Energy equality of MHD system under a weaker condition on magnetic field 12
- 53 Ryosuke Nakasato (Waseda Univ.)^b Asymptotic stability for quasi-linear plasma models with Hall effects via energy methods on Fourier–Herz spaces 12
- 54 Sonae Hadama (Kyoto Univ.) Stability of Fermi gas at zero temperature for the Hartree equation 12
- 55 Hajime Koba (Osaka Univ.) Mathematical modeling of inviscid multiphase flow system with surface flow 10
- 56 Hajime Koba (Osaka Univ.) Mathematical modeling of inviscid multiphase flow system with phase transition 10
- 57 Ken Furukawa (RIKEN) Data assimilation of the primitive equations in maximal L^p - L^q settings 10
- 58 Kei Noda (Kyoto Univ.) Analyticity in space-time of solutions to evolution equations with multilinear operator based on maximal regularity 10
- 59 Yoshiki Iida (Waseda Univ.) Energy equality for the 3D inhomogeneous Navier–Stokes equations in Lorentz–Besov spaces 12
- 14:15–16:15**
- 60 Motofumi Aoki (Tohoku Univ.) On the ill-posedness for the full system of the compressible Navier–Stokes equations 12
 Tsukasa Iwabuchi (Tohoku Univ.)
- 61 Dáithí Ó hAodha (Tohoku Univ.) Optimality of the decay estimate of solutions to the linearised curl-free compressible Navier–Stokes equations 12
 Tsukasa Iwabuchi (Tohoku Univ.)
- 62 Takahiro Okabe (Osaka Univ.) Forced rapidly dissipative Navier–Stokes flows 12
 Lorenzo Brandolese (Univ. Lyon 1)
- 63 Tomoyuki Nakatsuka On solvability of the time-periodic problem for the Navier–Stokes equation 12
 (Matsuyama Univ.)
- 64 Yuta Koizumi (Waseda Univ.) Convergence of approximating solutions of the Navier–Stokes equations 12
 Toya Taniguchi (Waseda Univ.)
- 65 Hiroki Ohyama (Kyushu Univ.) Fast rotation limit for the magnetohydrodynamics equations in a 3D layer 10
 Keiji Yoneda (Kyushu Univ.)
- 66 Takanari Egashira (Kyushu Univ.) Large time behavior of solutions to the 3D rotating Navier–Stokes equations 10
 Ryo Takada (Univ. of Tokyo)
- 67 Mikihiro Fujii (Kyushu Univ.) Global strong solutions to the compressible Navier–Stokes equation with the Coriolis force 12
- 68 Hirokazu Saito On decay properties of solutions to the two-phase Stokes equations with surface tension and gravity 10
 (Univ. of Electro-Comm.)
- 16:30–17:30 Talk Invited by Functional Equations Section**
- Youhei Tsutsui (Kyoto Univ.)^b Convergence to the initial data and weighted estimates for the incompressible Navier–Stokes equations

Real Analysis

March 17th (Fri) Conference Room V

9:00–11:45

- | | | |
|---|---|--|
| 1 | Masashi Toyoda (Toho Univ.) | Fixed point theorem in a ball space and Caristi fixed point theorem
..... 15 |
| 2 | Sachiko Atsushiba
(Tokyo Woman's Christian Univ.) | Convergence theorems for families of monotone nonexpansive mappings
in ordered Banach spaces 15 |
| 3 | Yasunori Kimura (Toho Univ.) | Approximation of common fixed points by modified shrinking projection
methods 15 |
| 4 | Koji Aoyama (Chiba Univ.) | Mean convergence theorems with respect to attractive points in a
Hilbert space 15 |
| 5 | Naoya Hatano (Chuo Univ.) | Proper embedding for Morrey–Lorentz spaces 15 |
| 6 | Denny Iveral Hakim
(Bandung Inst. of Tech.)
Naoya Hatano (Chuo Univ.)
<u>Toru Nogayama</u> (Chuo Univ.)
Yoshihiro Sawano (Chuo Univ.) | Bourgain–Morrey spaces and its applications 15 |
| 7 | Toru Nogayama (Chuo Univ.) | Complex interpolation for mixed Morrey spaces 15 |
| 8 | <u>Koichi Taniguchi</u> (Tohoku Univ.)
Masahiro Ikeda (RIKEN/Keio Univ.)
Isao Ishikawa (Ehime Univ.) | Boundedness of composition operators on Besov spaces 15 |
| 9 | Takanobu Hara (Hokkaido Univ.) | Strong barriers for weighted quasilinear equations 15 |

14:15–15:25

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| 10 | Toshiharu Kawasaki
(Tamagawa Univ./Chiba Univ./Chiba Univ.) | On the difference between the families of extended integrable functions
and extended primitive functions 15 |
| 11 | Ryoichi Kunisada | On topologically invariant means and almost convergence 15 |
| 12 | <u>Takumi Terae</u> (Tokyo Tech)
Toshiaki Murofushi (Tokyo Tech) | An equality condition for supremum increments of distorted measures
in non-additive measure theory 15 |
| 13 | <u>Yoshiaki Okazaki</u>
(Fuzzy Logic Systems Inst.)
Ryoji Fukuda (Oita Univ.)
Aoi Honda (Kyushu Inst. of Tech.) | Fréchet–Nikodym uniformity on a ring determined by a non-additive
measure 15 |

15:40–16:40 Award Lecture for the 2022 MSJ Analysis Prize

- | | |
|------------------------------|---|
| Eiichi Nakai (Ibaraki Univ.) | Generalized Campanato spaces with variable growth condition and
related topics |
|------------------------------|---|

17:00–18:00 Talk Invited by Real Analysis Section

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|--|---|
| Hitoshi Tanaka
(Tsukuba Univ. of Tech.) | Dyadic cubes analysis, dyadic rectangles analysis |
|--|---|

March 18th (Sat) Conference Room V

9:00–12:00

- 14 Goro Akagi (Tohoku Univ.) Solvability of evolution equations involving time-fractional derivatives
Yoshihito Nakajima (Tohoku Univ.) and applications 15
- 15 Kosuke Kita (Waseda Univ.) Mosco convergence of functionals associated with Laplacian under non-
Ôtani Mitsuharu (Waseda Univ.) linear boundary conditions 15
- 16 Takanori Kuroda (Waseda Univ.) Asymptotic behaviors of complex solutions for the semilinear heat equa-
Mitsuharu Ôtani (Waseda Univ.) tion with arbitrarily large initial energy 15
- 17 Shohei Kohatsu (Tokyo Univ. of Sci.) Behavior of weak solutions to a Keller–Segel system with gradient
Tomomi Yokota (Tokyo Univ. of Sci.) dependent chemotactic coefficient 15
- 18 Yutaro Chiyo (Tokyo Univ. of Sci.) Boundedness and stabilization in a quasilinear attraction-repulsion
chemotaxis system 15
- 19 Tobias Black (Paderborn Univ.) Possible points of blow-up in a chemotaxis system with environmental
Mario Fuest (Leibniz Univ. Hannover) dependent logistic source 15
Johannes Lankeit
(Leibniz Univ. Hannover)
Masaaki Mizukami
(Kyoto Univ. of Edu.)
- 20 Yoshiho Akagawa A quasi-variational inequality in plasticity model 15
(Gifu Nat. Coll. of Tech.)
Risei Kano (Kochi Univ.)
Takeshi Fukao (Kyoto Univ. of Edu.)
- 21 Akiko Morimura On existence and uniqueness of solutions to the moisture transport
(Japan Women’s Univ.) model in porous materials 15
Toyohiko Aiki (Japan Women’s Univ.)
- 22 Chiharu Kosugi (Japan Women’s Univ.) Omega-limit sets for the strong solutions to initial and boundary value
Toyohiko Aiki (Japan Women’s Univ.) problems for compressible elastic curves 15
- 23 Kota Kumazaki (Nagasaki Univ.) A multiscale model describing the wetting-drying phenomenon in porous
Adrian Muntean (Karlstads Univ.) materials 15

14:15–16:30

- 24 Daiki Mizuno (Chiba Univ.) Well-posedness and regularity results for a class of total variation flows
Ken Shirakawa (Chiba Univ.) of pseudo-parabolic types 15
- 25 Shodai Kubota (Kanagawa Univ.) Periodic solutions for Warren–Kobayashi–Lobkovsky–Carter type sys-
tems of grain boundary motions 15
- 26 Hiroshi Watanabe (Oita Univ.) Existence of solutions to a phase-field model of 3D-grain boundary
Ken Shirakawa (Chiba Univ.) motion 15
Salvador Moll (Univ. València)
- 27 Takeshi Fukao (Kyoto Univ. of Edu.) The Cahn–Hilliard system of LW model with forward-backward dy-
Pierluigi Colli (Univ. of Pavia) namic boundary condition 15
Luca Scarpa (Politecnico di Milano)
- 28 Noriaki Yamazaki (Kanagawa Univ.) Approximation of singular optimal control problems for doubly quasi-
Nobuyuki Kenmochi (Chiba Univ.*) variational evolution inclusions 15
Ken Shirakawa (Chiba Univ.)

29	Akio Ito	Tumor invasion model with quasi-variational structural porous medium diffusion	15
30	Toshitaka Matsumoto (Shizuoka Univ.) Naoki Tanaka (Shizuoka Univ.)	Generation of evolution operators under a generalized stability condition	15

17:00–18:00 Talk Invited by Real Analysis Section

Shunsuke Kurima (Tokyo Univ. of Sci.)	Time discretization methods for phase field systems
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Functional Analysis

March 15th (Wed) Conference Room VI

9:30–12:00

1	Yoritaka Iwata (Kansai Univ.)	Generalization of von Neumann equation based on the logarithmic representation of unbounded operators	15
2	Shuji Watanabe (Gunma Univ.)	A new operator-theoretical treatment of the BCS gap equation of superconductivity and its application to the second-order phase transition	15
3	Takashi Aoki (Kindai Univ.*) Ryuichi Ishimura (Chiba Univ.*) Yasunori Okada (Chiba Univ.)	Differential operator representations of continuous homomorphisms on some spaces of entire functions	15
4	Fumio Hiroshima (Kyushu Univ.)	Positivity improving for the translation invariant Nelson model	15
5	Itaru Sasaki (Shinshu Univ.) Yasumichi Matsuzawa (Shinshu Univ.) Shinnosuke Izumi (Shinshu Univ.) Kota Imura (Nagano Pref. Fujimi High School)	Analyticity of the ground state for the pair interaction model	15
6	Naoya Yoshida (Ritsumeikan Univ.)	Bohr–Sommerfeld quantization condition for self-adjoint Dirac operators	15
7	Kyohei Itakura (Univ. of Tokyo)	On resonances for inverted harmonic oscillators	15
8	Kota Ujino (Kyushu Univ.)	Exact Hausdorff dimension of the spectral measure for the graph Laplacian on a sparse tree	15
9	Kota Ujino (Kyushu Univ.)	No eigenvectors embedded in the singular continuous spectrum of Schrödinger operators	15

14:15–16:15

10	Hiroki Yagisita (Kyoto Sangyo Univ.) ^b	Variational formulation and self-adjointness of Laplace operator in infinite dimensional space \mathbb{R}^∞	10
11	Hiroki Yagisita (Kyoto Sangyo Univ.) ^b	Analytic semigroup of infinite dimensional interacting Brownian motion on \mathbb{R}^∞	5

- 12 Kiyoshi Mochizuki (Chuo Univ./Tokyo Metro. Univ.*) The principle of limiting amplitude for dissipative wave equations in magnetic fields 15
Hideo Nakazawa (Nippon Medical School)
- 13 Hirokazu Ohya (Salesian Polytech.) Embedding properties for some Weighted Sobolev spaces with growing weight 15
- 14 Kenta Higuchi (Ehime Univ.) Two-level adiabatic transition probability for small avoided crossings generated by tangential intersections 15
Takuya Watanabe (Ritsumeikan Univ.)
- 15 Yoshihisa Miyanishi (Shinshu Univ.) Spectrum of the Neumann–Poincaré operator on thin domains 10
- 16 Yoshihiro Anahara (Yokohama Nat. Univ.) Limit theorem for quantum walk on one dimensional lattice with inflows and outflows 15
Norio Konno (Yokohama Nat. Univ.)
Morioka Hisashi (Ehime Univ.)
Etsuo Segawa (Yokohama Nat. Univ.)
- 17 Kenta Higuchi (Ehime Univ.) Resonance expansion for finitely perturbed free quantum walks on the line 15
Hisashi Morioka (Ehime Univ.)
Etsuo Segawa (Yokohama Nat. Univ.)

16:30–17:30 Talk Invited by Functional Analysis Section

- Toshimitsu Takaesu (Gunma Univ.) On the spectral analysis of interacting quantum field systems

March 16th (Thu) Conference Room VI

9:30–12:00

- 18 Takashi Satomi (Univ. of Tokyo) Inequality for the convolutions on unimodular locally compact groups and the optimal constant of related inequalities 15
- 19 Toshihisa Kubo (Ryukoku Univ.) On the standardness of homomorphisms between generalized Verma modules for $\mathfrak{sl}(3, \mathbb{C})$ 15
- 20 Hiroshi Oda (Takushoku Univ.) Inversion formula for Opdam–Cherednik transform associated with a root system of type BC 15
- 21 Koichi Kaizuka (Nippon Medical School) Some remarks on the Dirac operator on symmetric spaces 15
- 22 Ryosuke Nakahama (NTT Inst. for Funda. Math.) Computation of weighted Bergman inner products on block off-diagonal matrices in bounded symmetric domains for $Sp(2r, \mathbb{R})$ 15
- 23 Yuichiro Tanaka (Univ. of Tokyo) A unitary trick for the multiplicity-freeness property 15
- 24 Víctor Pérez-Valdés (Univ. of Tokyo) Construction and classification of conformally equivariant differential symmetry breaking operators from a vector bundle over S^3 to a line bundle over S^2 15
- 25 Hideto Nakashima (Inst. of Stat. Math.) Decomposition formulas for gamma matrices of zeta functions associated with homogeneous cones 15

13:10–14:10 Talk Invited by Functional Analysis Section

- Takashi Hashimoto (Tottori Univ.) Qunatization of the moment map on symplectic vector spaces and minimal representation

March 17th (Fri) Conference Room VI

9:30–12:00

- 26 Shiho Oi (Niigata Univ.) Algebraic reflexivity of isometry groups of Lipschitz algebras 15
- 27 Yuta Enami (Niigata Univ.) Surjective isometries on the Banach algebra of analytic functions with
Takeshi Miura (Niigata Univ.) C^n -boundary values 12
- 28 Takeshi Miura (Niigata Univ.) Tingley's problem for uniformly closed function algebras 15
Daisuke Hirota (Niigata Univ.)
- 29 Takashi Sano (Yamagata Univ.) Inertia of Kraus matrices 10
Kazuki Takeuchi (Yamagata Univ.)
- 30 Masaru Nagisa The p -norm of some matrices 10
(Ritsumeikan Univ./Chiba Univ.)
- 31 Hiroaki Tohyama Operator inequalities related to Young's inequality 15
(Maebashi Inst. of Tech.)
Eizaburo Kamei
Masayuki Watanabe
(Maebashi Inst. of Tech.)
- 32 Takeaki Yamazaki (Toyo Univ.) Limit of iterated induced Aluthge transformations of centered operators
Hiroyuki Osaka (Ritsumeikan Univ.) 15
- 33 Hiroyuki Osaka (Ritsumeikan Univ.) On a class of K -entanglement witnesses 15
Tomasz Młȳnyk (Univ. of Gdańsk)
Marcin Marciniak (Univ. of Gdańsk)
- 34 Yuki Seo (Osaka Kyoiku Univ.) On data processing inequality for quantum \mathfrak{h}_α -Rényi divergences of
positive order 15

14:15–15:30

- 35 Hiroshi Inoue (Kyushu Sangyo Univ.) An unbounded generalization of Tomita's observable algebras II 15
- 36 Kei Ito (Univ. of Tokyo) Cartan subalgebras of C^* -algebras associated with complex dynamical
systems 10
- 37 Ryoya Arimoto (Kyoto Univ.) On the type of the von Neumann algebra of an open subgroup of the
Neretin group 15
- 38 Satoshi Goto (Sophia Univ.) On flat part commuting squares 10

15:45–16:45 Talk Invited by Functional Analysis Section

- Masaru Nagisa Non-linear traces on the algebra of compact operators and majorization
(Ritsumeikan Univ./Chiba Univ.)
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Statistics and Probability

March 15th (Wed) Conference Room VIII

10:00–11:30

- | | | | |
|---|--|---|----|
| 1 | Naoki Kubota (Nihon Univ.) | Lipschitz-type estimates for the time constant of the frog model | 15 |
| 2 | Takumu Ooi (Kyoto Univ.) | Convergence of time-changed α -stable processes by GMC | 15 |
| 3 | <u>Mikio Hirokane</u> (Osaka Univ.)
Masaaki Fukasawa (Osaka Univ.) | A limit theorem for generalized tempered stable processes and their quadratic variations with stable index tending to two | 15 |
| 4 | <u>Yuki Suzuki</u> (Keio Univ.)
Hiroshi Takahashi (Keio Univ.)
Yozo Tamura | A diffusion process with a symmetric stable potential on the negative side in \mathbb{R} | 15 |
| 5 | Yuki Suzuki (Keio Univ.) | Limit theorems for a diffusion process with a non-selfsimilar random potential | 15 |
| 6 | Shigeyoshi Ogawa (Ritsumeikan Univ.) | Another representation of the mean value theorem for noncausal stochastic integrals | 10 |

14:15–15:15 Talk Invited by Statistics and Probability Section

Shuta Nakajima (Meiji Univ.) First-passage percolation and its related topics

15:30–16:30 Talk Invited by Statistics and Probability Section

Song Liang (Waseda Univ.) A mechanical model of Brownian motion

March 16th (Thu) Conference Room VIII

10:20–11:10

- | | | | |
|----|---|---|----|
| 7 | Haruyoshi Tanaka
(Wakayama Med. Univ.) | On dimension estimates in nonconformal graph iterated function systems via asymptotic perturbation | 15 |
| 8 | Ryoji Takano (Osaka Univ.) | Large deviation principle for the Lyons–Victoir extension | 15 |
| 9 | Hiroki Yagisita (Kyoto Sangyo Univ.) ^b | Any Gibbs measure on infinite-dimensional space \mathbb{R}^∞ defines a regular Dirichlet form with local property on compact space $(\mathbb{R} \cup \{\infty\})^\infty$ | 10 |
| 10 | Yuta Nakagawa (Kyoto Univ.) | Density of states for Schrödinger operators associated with Gibbs point processes and nonpositive potentials | 10 |

11:20–11:50 Research Section Assembly

March 17th (Fri) Conference Room VIII

9:50–11:35

- | | | | |
|----|---|--|----|
| 11 | Teruo Tanaka (Hiroshima City Univ.) | Prophet inequalities for finite stage multiparameter optimal stopping problems | 10 |
| 12 | Toshiharu Fujita
(Kyushu Inst. of Tech.) | Markov decision process with converging branch system — Multiplicative reward system — | 10 |
| 13 | Hayato Takahashi (Random Data Lab.) | Posterior distributions weakly converge to Martin-Löf random parameters | 15 |

- 14 Hayato Takahashi (Random Data Lab.) Some explicit formulae for the distributions of words 15
- 15 Shoko Chisaki (Osaka Inst. of Tech.) Optimality of spanning bipartite block designs II 15
Shinji Kuriki (Osaka Pref. Univ.*)
Ryoh Fuji-Hara (Univ. of Tsukuba*)
Nobuko Miyamoto (Tokyo Univ. of Sci.)
- 16 Nobuhiro Taneichi (Hokkaido Univ. of Edu.) An index for selecting the multinomial goodness-of-fit test statistics and its applications 15
Yuri Sekiya (Hokkaido Univ. of Edu.)
- 17 Eri Kurita (Tokyo Univ. of Sci.) On the null distribution of multivariate normality test statistics using Takashi Seo (Tokyo Univ. of Sci.) multivariate skewness 15

14:25–15:25 Talk Invited by Statistics and Probability Section

- Takeru Matsuda (Univ. of Tokyo/RIKEN) Shrinkage estimation: from vector to matrix

15:40–16:40 Talk Invited by Statistics and Probability Section

- Yuma Uehara (Kansai Univ.) Information criteria for jump diffusion models

March 18th (Sat) Conference Room VIII

10:00–11:10

- 18 Ayaka Yagi (Tokyo Univ. of Sci.) On the test for adequacy in growth curve model with two-step monotone missing data 15
Toya Ozaki (Tokyo Univ. of Sci.)
Takashi Seo (Tokyo Univ. of Sci.)
- 19 Yuta Koike (Univ. of Tokyo) A high-dimensional central limit theorem for sums of i. i. d log-concave random vectors 15
Xiao Fang (Chinese Univ. of Hong Kong)
- 20 Koichi Yamagata (Nat. Inst. of Informatics) Efficiency of estimators for locally asymptotically normal quantum statistical models 15
Akio Fujiwara (Osaka Univ.)
- 21 Keita Nakamura (Tokyo Univ. of Sci.) Symmetry in square contingency tables using aitchison geometry 15
Tomoyuki Nakagawa (Tokyo Univ. of Sci.)
Kouji Tahata (Tokyo Univ. of Sci.)

Applied Mathematics

March 15th (Wed) Conference Room VII

9:50–11:50

- 1 Yuho Tanaka (Waseda Univ.) Jacobi polynomials and design theory 15
Tsuyoshi Miezaki (Waseda Univ.)
Manabu Oura (Kanazawa Univ.)
Himadri Shekhar Chakraborty (Shahjalal Univ. of Sci. Tech.)

2	<u>Sho Suda</u> (Nat. Defense Acad. of Japan) Alexander L. Gavriilyuk (Shimane Univ.)	Uniqueness of an association scheme related to the 4-(11, 5, 1)-design	10
3	<u>Norifumi Ojiro</u> (Toyota Tech. Inst.) Hajime Matsui (Toyota Tech. Inst.)	LCD property and reversibility in quasi-cyclic codes	15
4	<u>Shohei Satake</u> (Meiji Univ.) Hyungrok Jo (Yokohama Nat. Univ.)	On high-girth arc-transitive expander graphs	15
5	<u>Shinya Fujita</u> (Yokohama City Univ.)	Connectivity keeping paths in highly connected graphs	15
6	<u>Sho Fujimura</u> (Fukuoka Univ.) Shuji SHIRAISHI (Fukuoka Univ.)	On the generation of all Euler trails for an Eulerian graph with 2^n edges	10
7	<u>Tomoya Machide</u> (Nat. Inst. of Informatics)	An application of systems of Boolean polynomial equations to list color problems	15
8	<u>Tadashi Takahashi</u> (Konan Univ.) Tomohiro Washino (Konan Univ.)	On the proof of lemma in the learning model using Groebner basis	10

14:15–15:25

9	<u>Shuhei Tsujie</u> (Hokkaido Univ. of Edu.) Ryo Uchiumi (Hokkaido Univ.)	Graph embedding and the product of transpositions associated with edges	15
10	<u>Yumi Yamada</u> (Univ. of Tsukuba) Masahiro Hachimori (Univ. of Tsukuba) Akihiro Higashitani (Osaka Univ.)	The root distributions of Ehrhart polynomials of free sums of lattice polytopes	15
11	<u>Akihiro Higashitani</u> (Osaka Univ.) Kenta Ueyama (Hiroasaki Univ.)	Classification of skew polynomial algebras by switching of matrices and its associated simplicial complexes	15
12	<u>Hirotake Kurihara</u> (Yamaguchi Univ.) Takahiro Hashinaga (Saga Univ.)	Construction of homogeneous Lagrangian subalgebras using rooted trees	15

15:45–16:45 Talk Invited by Applied Mathematics Section

Kenta Noguchi (Tokyo Univ. of Sci.)	Graphs on closed surfaces, expressly triangulations and quadrangulations
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March 16th (Thu) Conference Room VII

10:00–11:45

13	<u>Iwao Sato</u> (Oyama Nat. Coll. of Tech.) Yusuke Ide (Nihon Univ.) Takashi Komatsu (Math. Res. Inst. Calc for Industry/Hiroshima Univ.) Norio Konno (Yokohama Nat. Univ.)	Metzler/Zeta correspondence	15
14	<u>Iwao Sato</u> (Oyama Nat. Coll. of Tech.) Takashi Kmatsu (Math. Res. Inst. Calc for Industry/Hiroshima Univ.) Norio Konno (Yokohama Nat. Univ.)	Alternating walk/Zeta correspondence	15

- 15 Yoshihiro Anahara (Yokohama Nat. Univ.) Convergence speed for quantum walks on one dimensional lattice with inflows and outflows 15
Etsuo Segawa (Yokohama Nat. Univ.)
Morioka Hisashi (Ehime Univ.)
- 16 Akihiro Narimatsu (Univ. of Fukuchiyama) Perfect state transfer, equitable partition and continuous-time quantum walk based search 15
Yusuke Ide (Nihon Univ.)
- 17 Satoshi Yabuoku (Kitakyushu Nat. Coll. of Tech.) Enumeration of connected bipartite graphs with given Betti number 15
Taro Hasui (Kyushu Univ.)
Tomoyuki Shirai (Kyushu Univ.)
- 18 Hiroyuki Yamagishi (Tokyo Metro. Coll. of Ind. Tech.) The best constant of the discrete ℓ^p Sobolev inequality on the complete graph 15
Kohtaro Watanabe (Nat. Defense Acad. of Japan)
- 13:00–14:10**
- 19 Xiao-Nan Lu (Gifu Univ.) Covering arrays guaranteeing a passing test 15
- 20 Akira Saito (Nihon Univ.) Two upper bounds on secure domination number 15
Shingo Degawa (Nihon Univ.)
Aiki Masuda (Nihon Univ.)
Hiroki Nishida (Nihon Univ.)
- 21 Yuichi Yoshida (Kitami Inst. of Tech.) On the three graph invariants related to matching of finite simple graphs 15
Kazunori Matsuda (Kitami Inst. of Tech.)
- 22 Robert E. L. Aldred (Univ. of Otago) Distance restricted matching extension in 5-connected graphs on surfaces which are not triangulation 15
Jun Fujisawa (Keio Univ.)

March 17th (Fri) Conference Room VII

9:50–11:50

- 23 Hironari Miyoshi (Saitama Univ.) Derivation of Brownian motion from the Goldstein–Taylor model 15
- 24 Itsuki Watanabe (Waseda Univ.) High-density limit of controlled density-dependent Markov processes 15
- 25 Antoine Diez (Kyoto Univ.) Scaling limits and emergent phenomena in a system of body-oriented particles 15
- 26 Jumpei Nagase (Shibaura Inst. of Tech./ZOZO Research) Permutation invariant deep neural network model for representing hierarchical sets 15
Yuki Saito (ZOZO Research)
Tetsuya Ishiwata (Shibaura Inst. of Tech.)
- 27 Tsuyoshi Yoneda (Hitotsubashi Univ.) Pointwise convergence theorem of mini-batch gradient descent in terms of deep neural network 15

- 28 Makoto Okumura (Hokkaido Univ.) Numerical simulations of a mathematical model of hair follicle formation
Yasuaki Kobayashi (Hokkaido Univ.) 15
Masaharu Nagayama (Hokkaido Univ.)
Hironobu Fujiwara (RIKEN)
Yasugahira Yusuke (Hitachi, Ltd.)
Kota Ohno (Chuo Univ.)
- 29 Karel Svadlenka (Kyoto Univ.) Variational analysis of finite strain elastoplasticity for structured materials 15

14:15–14:40 Presentation Ceremony for the 2022 Applied Mathematics Prize

14:45–16:30

- 30 Takuya Tsuchiya Numerical accuracy and stability of semilinear Klein–Gordon equation
(Hachinohe Inst. of Tech.) in de Sitter spacetime 15
Makoto Nakamura (Osaka Univ.)
- 31 Takuya Tsuchiya On behaviors of solutions of semilinear Klein–Gordon equation in con-
(Hachinohe Inst. of Tech.) tracting de Sitter spacetime 15
Makoto Nakamura (Osaka Univ.)
- 32 Kota Takeda (Kyoto Univ.) Computing an invariant measure of the N -vortex problem on the sphere
Takashi Sakajo (Kyoto Univ.) by Hamiltonian Monte Carlo 15
- 33 Hiroshi Fujiwara (Kyoto Univ.) On a Cauchy-type singular integral equation for x-ray computerized
Kamran Sadiq tomography with partial measurement 15
(Johann Radon Inst. for Comput. Appl. Math.)
Alexandru Tamasan
(Univ. Central Florida)
- 34 Toshimasa Ishige (Chiba Univ.) Rigorous numerics for finding the monodromy of Picard–Fuchs differ-
Akitoshi Takayasu (Univ. of Tsukuba) ential equations for a family of K3 toric hypersurfaces 15
- 35 Takehiko Kinoshita (Saga Univ.) Convergence order estimations of approximate inverse operator norm
Yoshitaka Watanabe (Kyushu Univ.) for second-order elliptic linear operators 15
Mitsuhiro T. Nakao (Waseda Univ.)

16:45–17:45 Talk Invited by Applied Mathematics Section

- Koya Sakakibara Structure-preserving numerical analysis of interfacial phenomena
(Okayama Univ. of Sci./RIKEN)

March 18th (Sat) Conference Room VII

9:50–11:50

- 36 Toshikazu Kuniya (Kobe Univ.) Hopf bifurcation in a delayed epidemic model with quarantine 15
- 37 Yoshiki Takeguchi (Kyoto Univ.) Optimal control of the SEIR epidemic model using a dynamical systems
Kazuyuki Yagasaki (Kyoto Univ.) approach 15

- 38 Sohei Tasaki (Hokkaido Univ.) Mathematical analysis of dedifferentiation in the intestinal epithelial cell community 15
Hiroki Nagai (Univ. of Tokyo/Tohoku Univ.)
Luis Augusto Eijy Nagai (Univ. of Tokyo)
Ryuichiro Nakato (Univ. of Tokyo)
Masayuki Miura (Univ. of Tokyo)
Yu-ichiro Nakajima (Univ. of Tokyo/Tohoku Univ.)
- 39 Kaname Matsue Correspondence between asymptotic expansions of blow-up solutions for ODEs and dynamics at infinity 15
(Kyushu Univ./Kyushu Univ.)
Hiroyuki Ochiai (Kyushu Univ.)
Hisatoshi Kodani (Kyushu Univ.)
Akitoshi Takayasu (Univ. of Tsukuba)
- 40 Yikan Liu (Hokkaido Univ.) Initial-boundary value problems for coupled systems of time-fractional diffusion equations 15
- 41 Tomoyuki Miyaji (Kyoto Univ.) A conjecture on the asymptotic reflection rule of a self-propelled particle 15
Robert Sinclair
- 42 Hiroshi Ishii (Kyoto Univ.) Pattern dynamics depending on integral kernel shape in reaction-diffusion equations with sufficiently weak nonlocal effect 15
- 14:15–15:05**
- 43 Kota Ohno (Chuo Univ.) Stability of traveling wave in nonlocally coupled oscillator system 15
Toshiyuki Ogawa (Meiji Univ.)
- 44 Ayuki Sekisaka (Meiji Univ.) Stability problem of segmented pattern for oscillatory reaction-diffusion systems 15
Toshiyuki Ogawa (Meiji Univ.)
- 45 Toshiyuki Ogawa (Meiji Univ.) Turing instability on compact metric graph 15
Shunsuke Kobayashi (Univ. of Miyazaki)
- 15:20–16:20 Talk Invited by Applied Mathematics Section**
Kei Nishi (Kyoto Sangyo Univ.) Pulse dynamics in a three-component reaction-diffusion system

Topology

March 15th (Wed) Conference Room III

9:30–12:00

- 1 Shintaro Kuroki Orlik–Raymond type classification of simply connected 6-dimensional torus manifolds with vanishing odd degree cohomology 15
(Okayama Univ. of Sci.)
- 2 Masakazu Nasu The limits of resolving directions of automorphisms of sofic systems 15

3	<u>Takeo Shirane</u> (Tokushima Univ.) Meirav Amram (Shamoon Coll. of Eng.) Shinzo Bannai (Okayama Univ. of Sci.) Uriel Sinichkin (Tel Aviv Univ.) Hiro-o Tokunaga (Tokyo Metro. Univ.)	Splitting invariants and a π_1 -equivalent Zariski pair of conic-line arrangements	15
4	<u>Kaori Yamazaki</u> (Takasaki City Univ. of Econ.)	Extensions of continuous increasing functions	10
5	<u>Naoki Fukasawa</u> (Tokyo Metro. Univ.)	Persistent cohomology and computation of cup length function	15
6	<u>Yu Tajima</u> (Hokkaido Univ.) Masahiko Yoshinaga (Osaka Univ.)	Magnitude homotopy type of graphs and Mayer–Vietoris type theorem	15
7	<u>Shuichi Harako</u> (Univ. of Tokyo)	The modular class of an orientable ρ -Q-manifold	15
8	<u>Shun Wakatsuki</u> (Nagoya Univ.) ^b Takahiro Matsushita (Univ. of Ryukyus)	Independence complexes of grid graphs	10

14:20–15:20 Talk Invited by Topology Section

Noboru Ogawa (Tokai Univ.)	Liouville and Weinstein structures on convex symplectic manifolds
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15:40–17:30

9	<u>Naotsugu Chinen</u> (Nat. Defense Acad. of Japan)	Isometry groups of symmetric products of $(\mathbb{R}^k)_p^q$	15
10	<u>Atsuhide Mori</u> (Osaka Dent. Univ.)	Mutual Bayesian learning for manifolds	15
11	<u>Shunsuke Kano</u> (Tohoku Univ.) Tsukasa Ishibashi (Tohoku Univ.)	Unbounded \mathfrak{sl}_3 -laminations and their shear coordinates	15
12	<u>Katsuhisa Koshino</u> (Kanagawa Univ.)	A characterization of compact sets in L^p -spaces and its application	15
13	<u>Masanori Adachi</u> (Shizuoka Univ.) <u>Yoshifumi Matsuda</u> (Aoyama Gakuin Univ.) <u>Hiraku Nozawa</u> (Ritsumeikan Univ.)	Harmonic measures and rigidity for surface group actions on the circle	15

March 16th (Thu) Conference Room III

9:30–12:00

14	<u>Takahiro Yamamoto</u> (Tokyo Gakugei Univ.)	Fiber singularities of continuous maps	15
15	<u>Naoki Hamada</u> (KLab Inc.) <u>Kenta Hayano</u> (Keio Univ.) <u>Hiroshi Teramoto</u> (Kansai Univ.)	Classification and recognition of constraint function-germs and feasible set-germs in multiobjective optimization	15
16	<u>Erika Kuno</u> (Osaka Univ.)	Uniform hyperbolicity of nonseparating curve graphs of nonorientable surface	10
17	<u>Erika Kuno</u> (Osaka Univ.) <u>Mitsuaki Kimura</u> (Kyoto Univ.)	Uniform hyperbolicity of fine curve graphs of nonorientable surfaces	10

31 Topology

- 18 Ryoma Kobayashi (Ishikawa Nat. Coll. of Tech.) Action on non-separating simple closed curves by the level 2 mapping class group of a non-orientable closed surface 10
Nao Imoto
- 19 Ryoma Kobayashi (Ishikawa Nat. Coll. of Tech.) The group generated by squares of Dehn twists about non-separating simple closed curves of a non-orientable closed surface 15
Nao Imoto
- 20 Genki Omori (Tokyo Univ. of Sci.) A finite presentation for the balanced superelliptic handlebody group 15
- 21 Genki Omori (Tokyo Univ. of Sci.) A small generating set for the balanced superelliptic handlebody group 10
- 13:00–14:00**
- 22 Teruaki Kitano (Soka Univ.) On the torus sum formula of Reidemeister torsion defined by Morse–Tatsuro Shimizu (Tokyo Denki Univ.) Smale flows 10
- 23 Masakazu Teragaito (Hiroshima Univ.) Hyperbolic L-space knots and their Upsilon invariants 10
- 24 Teruhisa Kadokami (Kanazawa Univ.) The Ma–Qiu index and the Nakanishi index for a fibered knot are equal, and ω -solvability 15

March 17th (Fri) Conference Room III

9:30–12:00

- 25 Eri Matsudo (Nihon Univ.) Minimum numbers of Dehn colors and \mathcal{R} -palette graphs 10
Kanao Oshiro (Sophia Univ.)
Gaishi Yamagishi (Sophia Univ.)
- 26 Kazuhiro Ichihara (Nihon Univ.) Two-tone colorings and surjective dihedral representations for links ... 10
Katsumi Ishikawa (Kyoto Univ.)
Masaaki Suzuki (Meiji Univ.)
Eri Matsudo (Nihon Univ.)
- 27 Takefumi Nosaka (Tokyo Tech) Symmetric rack cocycle invariants of closed 3-manifolds 10
- 28 Shosaku Matsuzaki (Int. Affairs Ashikaga Univ.) Spatial surfaces and multiple group rack cocycle invariants 10
Tomo Murao (Waseda Univ.)
- 29 Yuta Taniguchi (Osaka Univ.) A central extension of the n -quandle of a knot 15
Kokoro Tanaka (Tokyo Gakugei Univ.)
- 30 Kokoro Tanaka (Tokyo Gakugei Univ.) Knot quandles and knot groups for 2-knots 10
Yuta Taniguchi (Osaka Univ.)
- 31 Kodai Wada (Kobe Univ.) Finite type invariants of ribbon 2-dimensional string links with generalized Brunnian properties 10

14:20–15:20 Talk Invited by Topology Section

Atsushi Ishii (Univ. of Tsukuba) Alexander type invariants of groups, quandles and MCQs

15:40–17:00

- 32 Yohei Wakamaki (Osaka Univ.) Corks of some rational surfaces 15
- 33 Nobutaka Asano (Tsuyama Nat. Coll. of Tech.) Some lower bounds for the Kirby–Thompson invariant of 4-manifolds 15
 Hironobu Naoe (Chuo Univ.)
 Masaki Ogawa (Saitama Univ.)
- 34 Tsukasa Isoshima (Tokyo Tech) Trisections of the 4-sphere obtained by Gluck twisting 15
 Masaki Ogawa (Saitama Univ.)
- 35 Takahiro Oba (Osaka Univ.) Symplectic submanifolds in dimension 6 from Lefschetz fibrations 15

Infinite Analysis

March 17th (Fri) Conference Room IX

9:45–10:45

- 1 Yuichi Ueno (Kogakkan Univ./Kobe Univ.) Polynomial Hamiltonians for quantum Garnier system in two variables 10
- 2 Nobutaka Nakazono (Tokyo Univ. of Agri. and Tech.) Consistency around a cube property of Hirota’s discrete KdV equation 15
- 3 Takao Suzuki (Kindai Univ.) An affine Weyl group action on the basic hypergeometric series arising from the q -Garnier system 15
- 4 Yousuke Ohyama (Tokushima Univ.) Boundary behavior of q -Painlevé equation of type $A_4^{(1)}$ 15

11:00–12:00 Talk Invited by Infinite Analysis Special Session

- Rei Inoue (Chiba Univ.) Cluster realization of Weyl groups and its applications to representation theory

March 18th (Sat) Conference Room IX

10:00–10:45

- 5 Nao Komiyama (Nagoya Univ.) Associators and the Grothendieck–Teichmüller group in mould theory 10
- 6 Atsuo Kuniba (Univ. of Tokyo) New solutions to the tetrahedron equation associated with quantized six-vertex models 15
 Shuichiro Matsuike (Univ. of Tokyo)
 Akihito Yoneyama (Univ. of Tokyo)
- 7 Toshiki Nakashima (Sophia Univ.) Geometric crystal on unipotent variety and crystal of modified quantum algebra 15

11:00–12:00 Talk Invited by Infinite Analysis Special Session

- Travis Scrimshaw (Hokkaido Univ.)^b Krystal theory

Information for Speakers

The Organizing Committee apologizes that it had to cut the duration of contributed talks because of technical reasons. Since the schedule is very tight, we ask the speakers to strictly keep time. A bell will be rung when $2/3$ of the assigned time has passed. A second bell will be rung as soon as the time is up, and the speaker has to leave the stage.

Collaborative works are presented by the underlined authors. The talks with b marks denote presentations on blackboard. The speakers with \star marks are professors emeriti. If you find anything wrong in the program, do not hesitate to inform the Chair of Organizing Committee by sending e-mail to the address program23mar@mathsoc.jp.

Each conference room is equipped with a blackboard and a projector with HDMI and VGA interface for PC presentation. You are asked to use your own PC and to bring suitable accessories (for example, USB type C-HDMI adapter) for your presentation. The time for connecting your PC to the projector is a part of the assigned duration of your talk. You are strongly recommended to check beforehand if your slides can be properly displayed in the conference room. We also advise you to bring the PDF file of your presentation on a USB flash drive, just in case the PC connection does not work.

Information for Participants

Smoking is prohibited in the venue.

There is no parking area for participants. Please use public transportation.

Chuo University is an eduroam participant.

You can check the website of Chuo University CO-OP

https://www.chudai-seikyo.or.jp/time/index_time2.html

for its business hours.
